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## **Dangerrrr: cats could alter your personality**

JONATHAN LEAKE, SCIENCE EDITOR

THEY may look like lovable pets but Britain's estimated 9m domestic cats are being blamed by scientists for infecting up to half the population with a parasite that can alter people's personalities.

The startling figures emerge from studies into *toxoplasma gondii*, a parasite carried by almost all the country's feline population. They show that half of Britain's human population carry the parasite in their brains, and that infected people may undergo slow but crucial changes in their behaviour.

Infected men, suggests one new study, tend to become more aggressive, scruffy, antisocial and are less attractive. Women, on the other hand, appear to exhibit the "sex kitten" effect, becoming less trustworthy, more desirable, fun-loving and possibly more promiscuous.

Interestingly, for those who draw glib conclusions about national stereotypes, the number of people infected in France is much higher than in the UK.

The findings will not please cat lovers. The research — conducted at universities in Britain, the Czech Republic and America — was sponsored by the Stanley Research Medical Institute of Maryland, a leading centre for the study of mental illness. The institute has already published research showing that people infected with the *toxoplasma* parasite are at greater risk of developing schizophrenia and manic depression.

The study into more subtle changes in human personality is being carried out by Professor Jaroslav Flegr of Charles University in Prague. In one study he subjected more than 300 volunteers to personality profiling while also testing them for *toxoplasma*.

He found the women infected with *toxoplasma* spent more money on clothes and were consistently rated as more attractive. "We found they were more easy-going, more warm-hearted, had more friends and cared more about how they looked," he said. "However, they

were also less trustworthy and had more relationships with men.”

By contrast, the infected men appeared to suffer from the “alley cat” effect: becoming less well groomed undesirable loners who were more willing to fight. They were more likely to be suspicious and jealous. “They tended to dislike following rules,” Flegr said.

He also discovered that people infected with toxoplasma had delayed reaction times — and are at greater risk of being involved in car accidents. “Toxoplasma infection, could represent a serious and highly underestimated economic and public health problem,” he said.”

In Britain, concern over toxoplasma is growing among health experts — especially as the number of pet cats has grown to about 9m. Roland Salmon, an epidemiologist with the National Public Health Service for Wales, said: “The evidence is that cats are the main cause of infection.”

Toxoplasma moves in a natural cycle between rats and cats. Rats acquire it from contact with cat faeces and cats reacquire it from hunting infected rats. It has long been known that humans can become infected with the parasite through close contact with cats.

Pregnant women are advised to keep clear of the animals because the parasite can damage unborn babies. People with damaged immune systems, such as Aids victims, are also vulnerable.

Until now, however, the parasite has always been thought harmless to healthy people because their immune systems could suppress the infection. But this view seems certain to change, especially in the light of research at Oxford University.

Scientists there have found that when the parasite invades rats it somehow reprograms their brains, reversing their natural fear of cats. It is this same ability to destroy natural inhibitions that is thought to be at work in humans.

Doctors Manuel Berdoy and Joanne Webster at Oxford University are studying how toxoplasma alters rat behaviour and the chemical weapons it uses to subvert the brain.

Berdoy said: “The fact that a single-celled parasite can have such an effect on the mammalian or even human brain is amazing.”

One startling fact to emerge from research is the great differences in levels of infection. In France and Germany, for example, about 80%-90% of people are infected — nearly twice that in Britain or America.

“I am French and I have even wondered if there is an effect on national character,” Berdoy said.

Dr Dominique Soldati, a researcher at Imperial College in London, is studying ways of blocking toxoplasma from getting into cells. “Once you are infected you cannot get rid of this parasite and the numbers of them slowly grow over the years,” she said. “It’s not a nice thought.”